

The reference biomonitoring: towards a sustainable biomonitoring surveillance network in Flanders.

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Human biomonitoring provides an integrated measure for individual exposure to environmental pollutants. By using human biomonitoring as surveillance network, it becomes possible to identify vulnerable subgroups, to follow up time trends, to related health effects to environmental exposure and to pinpoint local fingerprints in hot spot areas.

The Flemish Environment and Health Survey (FLEHS) has been carried out since 1999 and is part of a health-related environmental surveillance system in Flanders. In the period 2008-'09, Flemish reference values were obtained both for historical pollutants such as heavy metals, chlorinated POPs and for new emerging chemicals such as phthalates, bisphenol A, perfluorocompounds, personal care products.

By linking biomonitoring data to questionnaire data, important determinants of exposure, such as age, sex, life style (e.g. smoking, food consumption), season, urbanization, social class, etc... can be identified. By comparing the current biomonitoring results to previous campaigns, time trends within Flanders can be assessed and policy actions can be evaluated. Measuring both biomarkers of exposure and biomarkers of effect in the same individuals allows to construct dose-response relationships and thus attain more insight in potential health effects of environmental pollutants.

The Flemish reference values serve as control values for human biomonitoring studies in local hot spot areas. Identification of specific exposure patterns and health problems in industrial hot spots such as Genk-Zuid and Menen can provide input for adapted policy actions.